

# EFFECT OF WEANING MANAGEMENT OF SPRING-BORN CALVES ON CALF SALE WEIGHT AND COW WEIGHT CHANGES

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## Story in Brief

Thirty-nine spring-born calves were randomly allotted by calf sex to three treatments consisting of: 1) calves weaned on October 4 and maintained for 22 days in drylot on a diet of bermudagrass hay and 4.1 lbs of concentrate; 2) calves weaned on October 25 and held overnight prior to simulated sale; and 3) calves separated from dams at 9 a.m. on October 26, the day of simulated sale. Calves were commingled for about 4 hours without feed or water to simulate hauling and then given access to hay and water until 3 p.m. at which time all calves were reweighed to simulate sale weight. Calves weaned on October 4 and held for 22 days before simulated marketing, tended to gain more weight than calves left with their dams on pasture. Calves weaned and held overnight lost about 16 lb more than calves weighed and returned overnight with their dams. All three groups of calves had similar weight losses when removed from feed and water for the 4-hour period from 9 a.m. to 1 p.m. to simulate hauling to an auction barn. Calves removed from their dams the previous evening lost a total of 36 lb before simulated arrival at the auction barn. Weight changes were similar when all calves were offered feed from 1 p.m. to 3 p.m. (6, 9 and 3 lb, respectively). The total weight loss from the final removal from pasture to simulated sale was -11, -27 and -15, respectively.

(Key Words: Beef Cattle, Shrink, Marketing, Weaning.)

## Introduction

Cattlemen often expend much time and energy in attempts to increase weaning weights. However, they may not know how much weight is lost due to shrinkage during the marketing process. This is especially true for small producers who must sell all their cattle at local auction barns. Larger

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operations must sometimes have calves stand overnight when gathering and sorting several pastures. In order to design management alternatives to minimize shrinkage, cattlemen must be aware of the magnitude of weight loss due to stress of handling during marketing. The objective of this study was to evaluate the effects on simulated sale weight of weaning calves 21 days prior to sale, holding calves overnight prior to sale or moving calves directly from the cow to sale.

## Materials and Methods

The study was conducted at the Eastern Research Station near Muskogee, Oklahoma. Thirty-nine calves and their dams were randomly allotted by calf sex to three treatments. All calves were from crossbred cows of Hereford, Angus and Simmental breeding and mated to a single Brangus bull. Calves were born between February 15 and April 1, 1989 and grazed bermudagrass pastures with their dams during the summer. On October 4, all cows and calves were weighed directly off pasture and allotted to treatment groups. Treatments were: 1) calves weaned on October 4 and maintained for 22 days in drylot on a diet of bermudagrass hay (10.9% CP, DM basis) and 4.1 lb of concentrate consisting of alfalfa hay, 4.7%, corn, 54.0%, cottonseed meal, 11.7%, and wheat, 19.6%; 2) calves weaned from cows at 3:30 p.m. on October 25 and held overnight prior to simulated sale with bermudagrass hay and water available; and 3) calves separated from their dams at 9 a.m. on October 26, the day of simulated sale. At 9 a.m. all calves were commingled and held in light-confinement without feed or water to simulate hauling and reweighed at 1:15 p.m. Calves were given access to hay and water until 3:15 p.m. at which time all calves were reweighed to simulate sale weight. Treatment 1 calves were fed their concentrate before commingling with other calves at 9 a.m. on simulated sale day. Cows were weighed full on October 4 and again on October 26. Calves from all three groups were vaccinated for IBR-PI3 (modified live virus) and 7-way blackleg. Data were analyzed with initial cow weight and calf weight as covariables.

## Results and Discussion

No health problems were noted with calves during the study. Calves that were weaned on October 4 and fed bermudagrass hay and concentrate for 22 days before simulated marketing tended to gain more ( $P < .15$ ) weight than calves left on their dams (Table 1). Calves removed from their dams and held overnight lost 16 lb compared to 1 or 2 lb loss for calves weighed and returned to their pen or their dams (Treatments 1 and 3, respectively).

**Table 1. Weights and weight changes of calves and their dams during three weaning and sale scenarios (least squares means).**

	Treatments		
	1	2	3
	Weaned 22 days before sale	Weaned day before sale	Weaned day of sale
No. of calves	14	13	12
Calf weight Oct 4, lb	514	530	498
Weight changes, lb			
Oct 4 - Oct 25	43	37	33
Oct 25 - Oct 26 (9:15 a.m.)	-1 <sup>a</sup>	-16 <sup>b</sup>	-2 <sup>a</sup>
Oct 26 (9:15 - 1:15)	-17	-19	-18
Oct 26 (1:15 - 3:15)	6	9	3
Total (Oct 4 - sale)	31 <sup>b</sup>	11 <sup>a</sup>	16 <sup>a</sup>
Cow weight Oct 4, lb	1145	1211	1270
Weight changes to Oct 26, lb	-7	-25	-7

a,b Means in the same row with different superscripts differ ( $P < .05$ ).

These losses demonstrate that while first separation from the dam presents a very stressful situation to the calf, removal for the short period required for weighing may have little negative impact on calf weight.

It is interesting that all three groups of calves had similar weight changes (-17, -19 and -18 lb) when removed from feed and water for the 4-hour period from 9:15 a.m. to 1:15 p.m. to simulate hauling to an auction barn. These losses probably represent gut fill rather than tissue losses. This means that calves removed from their dams the previous evening lost a total of 36 lb before simulated arrival at the auction barn. Weight changes were similar when all calves were offered hay and water from 1:15 to 3:15 p.m. (6, 9 and 3 lb, respectively). The total weight loss from final removal from presale treatments 9:15 a.m. on October 26 for Treatments 1 and 3, and 4 p.m. on October 25 for Treatment 2 to simulated sale was -11, -27 and -15, respectively.

Cow weight losses tended to be greater for cows with calves weaned overnight before simulated shipping. This would be expected because grazing activity would be interrupted with these cows. For cows to be sold as

culls, this weight loss could be economically important. It was surprising that dams of calves weaned 22 days before shipment did not gain more weight than cows nursing calves. An explanation is not apparent.

This study shows that weight losses from weaning to sale weight can be minimized by weaning calves about three weeks prior to sale. This period in the present study was apparently sufficient to overcome the stress of weaning and permitted the calves to gain weight and become accustomed to eating mixed feed. If preconditioning is not possible, this study suggests that the time from weaning to sale weight must be minimized. At a cost of \$150/ton for the concentrate and \$45/ton for hay, total feed cost for calves on Treatment 1 was \$11.46/head for 22 days. Treatment 1 calves gained 17.5 lb more than the average of Treatments 2 and 3 from October 4 to sale weight. Therefore, the values of added weight of the preconditioned calves would have to be at least \$.65/lb to cover cost of feed.